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ABSTRACT

To determine the relationship of reading ability to age, sex, Hispanic ethnicity, and majors in economics, political science, history, and psychology, 141 students who completed summer social science courses at a California community college were given the Nelson Denny Reading Test, which scores for vocabulary and comprehension. Of the 141 students, 77 were females, 48 males, and 16 Hispanics (not differentiated by sex); average age was 23. For females, correlations were significant at the .01 level between grade and vocabulary, comprehension, and total score. Male and Hispanic correlations were not significant at .05 or .01 levels. F ratios were computed to determine if mean differences of age, vocabulary, comprehension, total score, and grade were significant at .01 or .05 levels. The vocabulary and total score F ratio indicated that differences between the means of males, Hispanics, and females were significant at .01 level. In analysis by academic discipline, economics students obtained the highest mean grade, followed by political science, psychology, and history; economics students had the highest grade level equivalency (14.6), then history (13.9), psychology (13.7), and political science (13.2). Findings indicated academic achievement was related to vocabulary and comprehension ability in reading. (MH)

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ACADEMIC ACHIEVEMENT AND READING ABILITY

HISPANICS, MALES, AND FEMALES

by

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ACADEMIC ACHIEVEMENT AND READING ABILITY

HISPANICS, MALES, AND FEMALES

INTRODUCTION

Reading is a significant factor in academic achievement. Persons who read well have a better chance of succeeding in courses in which there is a significant amount of reading. While course assignments in reading may vary from instructor to instructor, it is generally recognized that courses in the social sciences require reading ability as a prerequisite for academic success.

Social sciences courses in the Community Colleges for the most part do not have prerequisites.* While it may be assumed that persons will register for courses in which they can perform well, students, for the most part "schedule themselves" in courses that they need for a specific purpose without taking into consideration skills in reading. A study (1981) concluded that reading tests were not required as prerequisites for enrolling in social

*A Community College in Southern California has the prerequisite that students need to take the Nelson Denny Test.

science courses.[1] Prerequisites for enrolling in writing for the first time are now in existence in the form of a placement examination in most colleges. Reading is such an issue in the California Community Colleges, that effective July 1, 1983, before a California Community College issues the Associate of Arts degree, the student must demonstrate competency in reading. The level of competency was not stated in the California Administrative Code (Title V, Section 51626).

THE PROBLEM

The objective of the study was to determine the reading ability, grade equivalencies of ability in reading, and to ascertain if there were relationships between academic achievement and/or in age and reading ability. Secondly, determine if males, females, or Hispanics differ as a group; if so, identify those differences. Thirdly, determine if disciplines differ; if so, identify those differences as well.

Reading ability was determined by using the Nelson Denny Test, Form D.[2] The test provides scores in vocabulary, comprehension, and rate. Grade equivalency was provided by the publisher of the test. Academic achievement was determined by the grade obtained by the student in the social sciences course. Hispanic students were those students who had a Spanish-surname.

The Nelson Denny Reading Test is a thiry minute examination with three parts: Vocabulary (10 minutes), Comprehension (20 minutes), and Rate (included in the twenty minutes of the

comprehension portion). The vocabulary test is given one point value while the comprehension value is two points.

The purpose of the research was to determine the reading scores of summer students who complete social sciences courses as measured by the Nelson Denny Test and grade earned in the course. This research attempted to provide data regarding the questions: What are the reading scores of those that complete the social sciences courses? Is there a relationship between reading ability and achievement? Is there a relationship between academic achievement and age? Do groups differ in scores and relationships? If so, how? What are the reading scores of students in the disciplines of psychology, economics, history, and political science? Do the scores differ? If so, how?

The study method was used. The groups selected for the study were accepted as they were, and no generalization was extended beyond the groups studied. Data obtained from the reading test was classified as follows:

First Group:	Total Group of Students
Second Group:	Males
Third Group:	Females
Fourth Group:	Hispanics
Disciplines:	Economics
	Political Science
	History
	Psychology

The mean and the standard deviation was completed for each of the reading scores, age, and grade. Correlations between age and grade were computed.

Significance of the correlations was computed using the test of significance at the .05 and .01 level. F ratios were used to determine the level of significance of the mean differences in the male, female, and Hispanic groups; and mean differences in economics, political science, history, and psychology.

The population of the study was students who completed social sciences classes in a public California Community College in the summer of 1982. All the course completers took the thirty minutes reading examination.

REVIEW OF THE LITERATURE

Research on reading at the Community College has dealt with textbook difficulty, student's grade placement, and discrepancies between the textbooks used and the students' placement. In one of the earlier studies, Cline (1971) studied the reading ability of Community College students in Missouri as well as the readability level of the textbooks.[3] Reading ability, as determined by the Nelson Denny Test of freshman was 12.6 and testbooks' level was 13. Cline was concerned with the gap between textbook level difficulty and the reading ability of the students.

Cline studied all textbooks used at the Community College; social science textbooks comprised 41% of the textbook sample.

Bertalan (1976) studied reading grade placement and final course grades in relationship to the readability level of social science textbooks used by 375 students in a Community College in Florida.[4] Average student grade placement in reading as determined by the Nelson Denny Test, Form C was 12.4 while the textbook level averaged 11.3 with only one textbook above the average of the student level of 12.4 The average student reading placement was 1.1 years higher than the readability of the textbooks. The study had 23% of the students below the grade placement level, 53% above it, and 24% had identical placements with the textbook placement of 11.3. Bertalan (1976) indicated that student grade placement was a significant predictor of final course grade but only if there was a positive gap, i.e., students had a higher level of reading ability compared to a lower level reading level of the textbook.[5]

Bertalan (1977) conducted a study of the readability level of social sciences textbooks.[6] He found that the readability level of textbooks had been "lowered" in comparison to the reading levels of the Cline Study of 1971. Bertalan documented through interviews with publishers, as well as analyis of the textbooks themselves, that textbooks are aimed at the 10th grade level. Bertalan (1977) found that the social sciences textbooks under his new study were, for the most part, below the 13th grade level, i.e, one at the 13-15, five at 11-12, and two at the 9-10 level.[7]

The level had been reduced over the years. Bertalan's study deals only with the textbooks used at a Community College in Florida. McClelland was cited by Bertalan (1977) as finding social sciences textbooks written at 16 and 13-15 level.[8] Hagstrom (1971) cited by Bertalan, conducted a study of 29 required textbooks in a California Community College.[9] McClelland found approximately half of the books used written below the 13th grade level, i.e., six textbooks at 16+, nine at 13-15, ten at 11-12th, and four at the 9-10th level.

Holmber, et al. (1979) used the Nelson Denny placement of 9.8-12.8 (comprehension) for the placement of students in a blocked project in which reading and writing skills were taught along with a social sciences course.[10] A higher percentage of A's and B's were obtained by the blocked group.

A correlation has been found between academic achievement and test scores in the previous editions of the Nelson Denny Test.[11] A 1949 study cited by the publishers reported correlations in 57 studies. The correlation between specific subject matter and reading scores ranged between .10 and .70 with a median of .40.[12]

Unpublished data from the University of Minnesota provided correlations between the Nelson Denny, high school rank of students, and M.S.A.T. scores. There was zero order correlations between the three local predictors; however, multiple correlations increased the correlation in the Nelson Denny Test:

Mathematics	.35
Chemistry	.331
English	.338
Biology	.65
Overall Grade Point Average	.611

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The scores of the test can be used independently or combined into a total score. Correlation coefficients between the Nelson Denny Reading Test sections and first quarter performance of freshman at the University of Minnesota, St. Paul Campus were as follows:

Subject	Vocabulary	Comprehension	Total Score
Agriculture	.37	.34	.37
Home Economics	.24	.34	.33
Forestry	.34	.29	.36

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The publishers suggest the critical analysis of each of the scores to determine the student's strengths and weakness in reading. Differences in scores point to an analysis of potential problems in reading rather than a specific one.

Summer Session students are unique in various respects. First, the educational experience is compacted into six weeks of instruction, i.e., one third of the usual time of eighteen weeks in the regular semester. Secondly, the reasons for attending the summer session are closely related to transfer functions. In an unpublished report, Rivera (1981) reported that summer school students enrolled in the social sciences were mostly high school graduates, young, i.e., 24 years old average, and had completed

an average of thirty-four semester units. Most were returning students. The most stated reason for enrolling in a social science course was that the course was required for a major (22%), or for the Associate of Arts degree (19%). Transfer requirements was indicated by 13% of the students; hence, students who enroll in summer session classes in the social sciences are for the most part very definite about their educational goal. It is highly reasonable to assume that this translates to a high motivation for success in their course work.[15]

As further indication that summer school students enrolled in social sciences are special students who attend college for a specific purpose, Rivera (1981) found that sixty percent of those enrolled in the summer of 1981 were not returning to the Community College in the Fall 1981 semester because they had completed a degree, a two year transfer program, or were planning or transferred to a four-five year college.[16]

FINDINGS

GROUP

During the Summer of 1982 all students enrolled in social sciences courses were given the Nelson Denny Test. The total population was 159 students enrolled in economics, history, political science, and psychology courses. The population under study was reduced to 141 after all incomplete entries were eliminated from the analysis. An entry was considered "incomplete"

if any one of the items under study was missing. An instructor did not require students to write their rate of reading; therefore, an analysis of the rate was not incorporated in the study.

Table 1
Means and Standard Deviations in Reading: Group

	Means	Standard Deviation
Age	23.3	8.4
Vocabulary	38.0	19.1
Comprehension	39.5	12.0
Total Score	77.5	28.8
Grade	2.7	1.07
N = 141		

Of 141 students, 77 were females, 48 males, and 16 Hispanics. The average age of students was 23 years. The vocabulary average was 38 with a standard deviation of 19.1; comprehension average was 39.5 with a standard deviation of 12.0 and the final score (comprehension + vocabulary) was 77.5 with a standard deviation of 28.8. The average grade was 2.7 with a standard deviation of 1.07 for the group.

GRADE EQUIVALENCY

Grade equivalency for the scores is provided by the Nelson Denny based on a standardized sample of college students.

Social Science students enrolled in the Summer 1982 session had scores above the 12th grade level in all sections of the test. Vocabulary score was 14.5 grade equivalency, comprehension score was 13.1, and the combined score was 13.8. Table 2 indicates the grade equivalencies.

Table 2
Grade Level Equivalencies: Group

	Grade Equivalency
Vocabulary	14.5
Comprehension	13.1
Total Score	13.8

CORRELATIONS

Correlations were computed between the scores and grade to determine if a relationship existed. There was a significant correlation at the .01 level between grade, vocabulary, comprehension and the total score. No significant correlation was found between age and vocabulary, comprehension, and total score.

Table 3 contains the correlations and the level of significance of age and grade correlations.

Table 3
Age and Grade Correlations: Group

	Age	Grade
Age		.07
Vocabulary	.15	.40*
Comprehension	-.08	.44*
Total Score (V+C)	.07	.45*

*.01 Level of Significance

FEMALES

Table 4 indicates the average and standard deviations for age, grade, vocabulary, comprehension, total, and rate scores.

The average age of the student was 22, vocabulary score was 36.1, and comprehension 40.1. The grade average was 2.77.

Table 4
Means and Standard Deviations in Reading : Female

	Means	Standard Deviation
Age	22.0	7.0
Vocabulary	36.1	18.4
Comprehension	40.1	11.4
Total Score	76.2	27.7
Grade	2.77	1.1

N = 77

The standard deviations are listed on Table 4 for the female group. Age had a standard deviation of 7.0; vocabulary 18.4; comprehension 11.4; total score 27.7; and grade 1.1

GRADE EQUIVALENCY

Females had a grade equivalency above the 12th grade in all scores. The highest level was in vocabulary with 14.3, followed by the total score of 13.6 and comprehension with 13.1. Table 5 indicates the grade equivalencies of the female scores.

Table 5
Grade Level Equivalencies: Female

	Grade Equivalency
Vocabulary	14.3
Comprehension	13.1
Total Score (V+C)	13.6

CORRELATIONS

Correlations were significant at the .01 level between grade and vocabulary, comprehension, and total score. There was no correlation between age and grade.

Age had a correlation of .39 at the .01 level of significance and .28 at the .05 level with vocabulary. Table 5 shows all of the age and grade correlations of the female group.

Table 6
Age and Grade Correlations: Female

	Age	Grade
Age		.11
Vocabulary	.39*	.55*
Comprehension	.05	.58*
Total Score	.28**	.61*

*.01 Level of Significance
**.05 Level of Significance

MALE

Male scores are shown in Table 7. The male group was slightly older than the female group averaging 24.5 years old, however, the female group had a lower standard deviation, 7.0 compared to 9.26 in the male group. Vocabulary scores were higher in the male group, 45.1 compared with 36.1 in the females. Comprehension scores were slightly higher, i.e., 40.1 in females and 40.8 in the male group. Males and females had standard deviations of 18.5 and 18.4 respectively, however, the males had a slightly higher standard deviation in vocabulary, i.e., 12.4 for males and 11.4 for females.

The overall grade point average for the males was slightly lower than the female average of 2.77. However, there was slightly more grade variability in the females, i.e., 1.1 standard deviation compared with 1.08 for the males. Table 7 contains the means and standard deviations of the male group.

Table 7
Means and Standard Deviations in Reading: Male

	Means	Standard Deviation
Age	24.5	9.26
Vocabulary	45.1	18.5
Comprehension	40.8	12.5
Total Score	85.8	28.4
Grade	2.75	1.08

N = 48

GRADE LEVEL

Grade levels for males was above the 12th grade level in all scores. The highest equivalency was in vocabulary with 15+ followed by the total score of 14.2 and comprehension 13.1. The males had a higher level of equivalency in vocabulary than the female group, the same equivalency in comprehension, and a higher equivalency in the total score. Table 8 shows the grade equivalencies for the male group.

Table 8
Grade Level Equivalencies: Male

	Grade Equivalency
Vocabulary	15.0+*
Comprehension	13.1
Total Score	14.2

CORRELATIONS

Male correlations were not significant at the .05 or .01 level of significance. There were five female correlations (four at the .01 level and one at the .05 level) while the male group had no significant correlations. Table 9 shows the male correlations.

* The Nelson Denny does not discriminate higher than the 15th grade level.

Table 9
Age and Grade Correlations: Male

	Age	Grade
Age		.07
Vocabulary	.01	.20
Comprehension	-.13	.24
Total Score (V+C)	-.05	.23
N = 48		

HISPANICS

The Hispanic group comprised 11% of the reading study. Averages and standard deviations are given in Table 10. The average age was 25.9 with a standard deviation of 11.1; vocabulary's 25.9 with a standard deviation of 16.7; comprehension's average was 33.3 with standard deviation of 12.6. The total score produced an average of 59.2 and a standard deviation of 27.3. The grade point average was 2.19 with a standard deviation of .75

The Hispanic group is unique in that it is different from the male and female groups in all scores. It had the lowest score in vocabulary, 25.9 compared with 45.1 of the males; the lowest comprehension, 33.3 compared with 40.8 of the males; lowest total score, 59.2 compared with 85.8 of the males; and the lowest grade point average, 2.19 compared with highest female grade point average of 2.77

Table 10
Means and Standard Deviations in Reading: Hispanic

	Means	Standard Deviation
Age	25.9	11.1
Vocabulary	25.9	16.7
Comprehension	33.3	12.6
Total Score	59.2	27.3
Grade	2.19	.75

N = 16

Grade Equivalencies

Hispanics had grade equivalencies above the 12th grade level in all scores with the exception of comprehension. Vocabulary grade equivalency was the lowest of the three groups, 12.7 compared with the highest 15+ for the male group; approximately 11.1 comprension compared with the equal equivalency of males and females of 13.1, total score of 12 was the lowest compared with the highest of the male group 14.2. Table 11 shows the grade equivalencies of the Hispanic group.

Table 11
Grade Level Equivalencies: Hispanic

	Grade Equivalency
Vocabulary	12.7
Comprehension	11.1
Total Score (V+C)	12.0

Correlations

Correlations of the Hispanic group are given in Table 12. None of the correlations are at the .05 or .01 level. The female group had more grade correlations at the .01 level than either of the two groups. The female groups correlated vocabulary 49, comprehension .53, and total score .54 at the .01 level of significance. While there were no correlations of significance in the Hispanic group, males had a correlation of .31 at the .05 level while the female group had grade and rate correlation of .43 at the .05 level of significance.

The female group had correlations between age and vocabulary .39 (.01 level), and the total score .28 (.05 level), while the Hispanic group had no significant correlations of age with any of the scores. Table 12 indicates the Hispanic correlations.

Table 12
Age and Grade Correlations: Hispanic

	Age	Grade
Age		.18
Vocabulary	-.20	-.004
Comprehension	-.26	.19
Total Score (V+C)	-.24	.08

*.01 Level of Significance

**.05 Level of Significance

DIFFERENCES BETWEEN GROUPS

F ratios were computed to determine if the mean differences of age, vocabulary, comprehension, total, and grade were significant either at the .01 or .05 level in the male, female, and Hispanic group.

Table 13 indicates the F ratios for the three groups.

Table 13
F Ratios for Males, Females, and Hispanics

Age	2.17
Vocabulary	7.49*
Comprehension	2.55
Total	5.66*
Grade	2.14

The vocabulary and total score F ratio indicates that the difference between the means of males, Hispanic, and females is significant at the .01 level, i.e., we would expect the difference of the group to occur 1% by chance alone.

READING IN THE SOCIAL SCIENCES DISCIPLINES

The reading scores of students enrolled in the specific disciplines of history, psychology, political science, and economics were analyzed to determine the reading means, standard deviations, grade equivalencies, and correlations between age and grade. Further analysis of the differences between the means was conducted to determine through the F ratio if there were differences between the means at the .01 or .05 level of significance.

Means and Standard Deviations

Table 14 indicates the means and standard deviations in each of the disciplines for age, vocabulary, comprehension, total score and grade. The highest score in vocabulary, comprehension, and total was in the economics class. Also, the highest grade was in the economics class. History followed economics in vocabulary with a score of 40.4, followed by psychology with 36.7, and the lowest score was in political science, 33.98. Psychology obtained the second highest score in comprehension, 40.18 followed by history with 39.7, and finally, the lowest score was achieved in political science, 37.32.

Table 14
Means and Standard Deviations: Economics, Political Science, Psychology and History

Discipline	Age	Vocabulary	Comprehension	Total	Grade
Economics	21.9 (4.8)	46.24 (23.8)	44.0 (10.8)	90.43 (33.0)	3.07 (.62)
Poli. Sci.	21.86 (8.2)	33.98 (16.1)	37.32 (11.0)	71.30 (25.4)	2.84 (2.37)
Psychology	26.40 (19.31)	36.74 (18.7)	40.18 (14.0)	76.92 (30.7)	2.63 (.97)
History	22.53 (8.28)	40.42 (19.9)	39.71 (11.5)	80.13 (29.3)	2.51 (1.01)

Standard deviation indicated by parenthesis.

As noted earlier, economics students obtained the highest grade, 3.07 followed by political science with 2.84, psychology 2.6, and finally history with the lowest grade of 2.51.

Comprehension scores had similar standard deviations, i.e., 10.8 in economics, 11 in political science, 14 in psychology, and 11.5 in history. Vocabulary had a wider range of standard deviations, i.e., 23.8 in economics, 16.1 in political science, 18.7 in psychology, and 19.9 in history.

Grade standard deviations range from a low of .62 in economics, to a high of 1.27 in political science. Psychology had a standard deviation of .97 and history 1.01.

GRADE EQUIVALENCIES

Vocabulary grade equivalency was at grade 14 and higher in political science, psychology, and history. Economics had the highest grade equivalency, 15+.

Comprehension grade equivalency was at the 12th grade level in political science, 13.1th grade level in psychology and history, and 13.7 in economics.

The Total score was 13.2 in political science, 13.7 in psychology, and 13.9 in history. The highest grade equivalency was in economics with 14.6. Table 15 indicates the grade equivalencies for the disciplines in vocabulary, comprehension, and the total score.

Table 15
Grade Equivalencies

Discipline	Vocabulary	Comprehension	Total Score
Economics	15.0+	13.7	14.6
Poli. Sci.	14.0	12.0	13.2
Psychology	14.4	13.1	13.7
History	14.7	13.1	13.9

CORRELATIONS

Scores obtained by those who completed the social science courses in summer shcool were analyzed to determine if a relationship existed between academic achievement as measured by the

grade obtained in the course and with the age of the student. A correlation coefficient was computed. Table 16 indicates the correlations obtained.

Age Correlations: Political science was the only discipline that had a significant correlation at the .05 level of significance. The other age correlations were not significant at neither the .05 or .01 level of significance.

Grade Correlations: No significant correlation was found between age and grade. Economics had a significant correlation at the .05 level while political science and history had a correlation at the .01 level of significance with vocabulary. The psychology correlation was not significant at the .05 or .01 level. Comprehension had correlations of significance in all disciplines. Economics and psychology had the comprehension correlation at the .05 level of significance while political science and history had a correlation at the .01 level of significance. All but psychology had a significant correlation between grade and total score. The level of significance of the economics correlation was .05 while political science and history had a correlation at the .01 level of significance.

Table 16
Correlations

	Econ	Pol. Sci.	Psych	History
Age				
Vocabulary	.41	.37**	-.04	.16
Comprehension	.23	.10	-.20	-.20
Total Score	.37	.28	-.11	.03
Grade				
Age	.13	.19	.09	.14
Vocabulary	.53**	.50*	.19	.52*
Comprehension	.65**	.50*	.33**	.52*
Total Score	.60**	.53*	.27	.58*
N	14	44	38	45

*.01 level of significance
**.05 level of significance

DIFFERENCES BETWEEN MEANS IN THE DISCIPLINES

The means obtained by economics, political science, psychology, and history students are given in Table 14. To determine if the differences observed in each of the means is significant at either the .01 or .05 level of significance, an F ratio was obtained. Table 17 gives the F ratios of age,

vocabulary, comprehension, total, and grade. There were no significant differences between the disciplines at either the .01 or .05 level of significance.

Table 17
F Ratios of Economics, Political Science, Psychology, and History

Mean	F. Ratio
Age	2.48
Vocabulary	1.90
Comprehension	1.18
Total	1.78
Grade	1.35

SUMMARY, RECOMMENDATIONS, AND CONCLUSIONS

A survey was conducted on academic achievement and reading ability of those who completed the social sciences classes in a California Community College. The Nelson Denny Test, Form D and grade obtained in the course were used. Once the whole group of students was studied, further analysis was conducted on two additional groups. The first analysis comprised males, females, and Hispanic students. The second analysis was composed of the diciplines themselves, i.e., economics, psychology, political science, and history.

The mean and standard deviation, grade equivalency provided by the publisher of the test, correlations, and F ratios were used. Significance levels of .05 and .01 were used in the correlations and the F ratios. All those who completed the social sciences classes in the 1982 summer session participated in the study. 11% of the students who failed to complete all items required in the study were not included in the study.

As a group, those who completed the testing were reading above the 13th grade level; 14.5 level in vocabulary, 13.1 in comprehension and 13.8 in the total score, i.e., vocabulary and comprehension combined. The publisher of the test indicated that the scores should be used in combination, i.e., total score. There were correlations at the .01 level of significance in vocabulary, comprehension, and the total score.

The second part of the analysis comprised of separating those that completed the testing into three groups; Males, Females, and Hispanics.

Males had a grade equivalency in reading scores of 15+, comprehension 13.1, and the total score of 14.2. Male correlations were not significant at either the .05 or .01 level of significance.

Female grade equivalency was 14.3 in vocabulary, 13.1 in comprehension, and 13.6 in total score. Correlations between age and vocabulary and the total score occurred in the female

group, .01 level in vocabulary and .05 level in the total score. Correlations at the .01 level of significance between grade and vocabulary, comprehension, and total score occurred.

Hispanic grade equivalencies were lower than the two groups, 12.7 in vocabulary, 11.1 in comprehension, and 12 in the total score. As with the males, the correlations obtained were not significant either at the .05 or .01 level of significance.

The differences between males, Hispanics, and females was significant at the .01 level of significance in vocabulary and the total score.

An analysis of the total me ans in the disciplines of history, political science, economics, and psychology indicated that all students enrolled were reading above the 13th grade level in all disciplines. Economics had the highest grade level equivalency, 14.6; history 13.9; psychology 13.7; and political science 13.2.

Correlations between age and vocabulary, comprehension, and the total score were not significant either at the .05 or .01 level of significance with the exception of political science whose correlation was .37 at the .05 level of significance.

Correlations between grade and age, vocabulary, comprehension, and the total score were numerous. No significant correlation either at the .05 or .01 level of significance was found between grade and age. Economics had a correlation of .53 at the .05 level of significance in vocabulary, political science's correlation was .50 and history's correlation was .52, both at the .01 level

of significance. Comprehension correlations were .65 in economics at the .05 level, .33 in psychology at .05 level, .50 in political science at the .01 level, and .52 in history at the .01 level of significance. The total score and grade produced three correlations. Economics .60 at the .05 level, political science .53 and history .58 both at the .01 level of significance.

The differences between the means in age, vocabulary, comprehension, total, and grade were compared in the disciplines of economics, political science, psychology, and history to determine if the differences were significant at the .01 or .05 level of significance. The differences of the means were not significant.

The reading level of students at the Community College in California were above those levels of Community College students reported by Cline (1971), i.e., 13.8 versus 12.6. The scores of those who completed the testing were more than one grade level above Bertalan's (1976) reading level of 12.4 compared to California's 13.8. Students in the study also read one grade level higher than those found by Holmer et al (1979) of 9.8 - 12.8.

The present study did not provide data on textbook readability level; however, Hagstrom (1971) found readability level of textbooks below the 13th grade level while Bertalan (1977) confirmed that textbooks were being written at the 10th grade reading level. Could the high reading levels of those that

completed the testing be explained on terms of greater success due to easier textbooks? Is the Nelson Denny sample representative of California's school population? The college sample did not contain a single Community College in California, for that matter no institution of higher education from California was included in the standardization sample. Community Colleges from Idaho, Massachussetts, Pennsylvania, Texas, and two from the State of Washington were included. The sample was comprised of 11 four-year colleges and six Community Colleges. The publisher of the Nelson Denny cautions the user of the test in not using the norms as "representative sample of the national college population". The publisher further indicates that it "has become extremely difficult to obtain cooperation on the college level for the standardization of tests".

Highly motivated Community College students with a definite educational goal appear to do well in reading and in academic achievement. Students who completed high school, had spent at least one year of college work, have been introduced to higher education requirements, appear to do well.

The high standard deviations create a problem. If one assumes a normal distribution, then +1 and -1 standard deviations will contain 68% of the cases, the situation changes, i.e., 68% of the group reads between 10.7 and 15+ grade level in vocabulary, 9.2 - 15 in comprehension, and 10.2 - 15+ in the total score. Female, male, and Hispanic reading level ranges will also show these ranges.

The higher scores were obtained at the end of the term. Persons who finish social sciences courses have gone through what we may call an "instructional session in reading", i.e., they have learned reading informally through the course.

Grade correlations at the .01 level of significance between grade and vocabulary (.40), comprehension (.44), and the total score (.45) were obtained by the group. The lack of significant correlations in age were puzzling at first, however, given the age of the students, the impact of television on reading may be working here. Academic achievement is related to vocabulary and comprehension ability in reading.

The group differences of males, females, and Hispancis were only significant at the .05 or .01 level in vocabulary and the total score. The total score was pushed by the high vocabulary score. Although no significant differences between the groups were found in the other areas, the apparent differences between the groups should be noted. The male group outperformed the female and Hispanic group while the female group had more correlations than the two other groups. The female findings can be explained from a cultural point of view in which females are socialized not to out-perform males. The Hispanic difference may be related to second language interference; however, the profile of students did not include second language knowledge/skills of the Hispanic students.

The mean differences in the disciplines themselves point to a pattern that may be explained in terms of the type of student who enrolls in each of the social sciences courses. History and political science courses would attract a general student since the courses fulfill the American Institutions requirements for the Associate of Arts degree and the transfer requirement for a four-year degree. Psychology attracts students with more diverse goals, i.e., continuing education, general education, and major. Economics for the most part serves the business students; therefore, courses that appeal to a general audience have lower scores. While differences were found between the disciplines; they were not significant at the .05 or .01 level.

While grade level equivalencies were above or at the 12th grade level in all of the disciplines, the reading level of those students who finish summer school in the social sciences cannot be ascertained as at or above the 12th grade level. To determine at what range 68% of the students read in the disciplines, one compares the +1 and -1 standard deviations and we find that students read below the 12th grade level, e.g., the lowest reading level for economics in vocabulary is 11.9, political science 10.4, psychology 10.4 and history 11. All had the 15 or 15+ grade level of equivalency, in the upper limit. For vocabulary, the same finding holds, economics had a low reading level of 10.6, political science 8.7, psychology 9.8, and history 9.2 in vocabulary.

The apparent lower levels of reading may indicate that some students are completing courses without the proper reading skills for succeeding in college academic courses. Further, some students are learning how to read in the courses themselves which may account for lower grades.

Lack of correlations of reading scores with grades may point to cultural and sexual biases of the test itself. Is it possible that the reading passages and vocabulary have an adverse negative impact on women and Hispanic students at the Community College level? The scope of this study does not allow to further speculate on cultural biases in examinations; however, there is sufficient research to indicate that examinations do have biases that adversely impact on women and minorities.

Norms are needed for the California Community Colleges. The diversity of the student body makes the state a very unique state in the United States. The normative sample for "Grade Equivalency" just does not represent the California Community College educational experience.

Further study needs to be conducted in the background of the students themselves. Some researchers have reported that Hispanic students have lower grades and academic abilities when they graduate from high school.[17] Does this indicate that the Hispanic students continue with the "gap" into the Community College? The study of the student's background would shed more light on the gap found in this study.

More variables need to be incorporated into the research, e.g., number of units completed, grade point average, English courses completed, educational goals, i.e., terminal, transfer, lifelong learning. A study of the beginning reading scores of students enrolled in social sciences courses would provide valuable information of the reading level of students at the beginning of the semester. Form C of the Nelson Denny could be administered as a post-test to determine the reading level growth in the semester.

The size of the Hispanic sample is small and conclusive statements are difficult to make. The findings point the way to research in the future. A larger sample is needed. Grade equivalency needs to incorporate the diverse student population in the Southwest.

Bray (1983-3/4) cites studies that confirm some of the findings of the study; however, Bray's citations do not quite coincide with the students who enrolled in social sciences courses. For example, in a preliminary study of reading levels of students enrolled in social sciences courses at a Community College in California, only 3% of the students had reading levels below the eighth grade level; however, this figure only represents social sciences students and not the total college population of the

college. Until there is a reading test that is required for all students in Community Colleges, findings will be hard to compare. Reliability and validity of reading tests have been the concern of the researchers in the past. Considerable attention has been given to the recent changes that the Educational Testing Service had to make because the Service failed to recognize that some questions had more than one answer. Changes in the scores of students had to be made due to this finding.

Scores obtained by a Mexican American group of high school students were questioned by the same Testing Service. In this case, the students had to take the test again.

Classification of English as a Second Language students under "remediation",while conducive to classification and analysis by State agencies, creates another research problem since remediation implies that students have not learned something in the process of their schooling. How can students who have not studied English be labeled "remedial."?

A bright note is the recognition of many Community Colleges for assessment and placement of students; however, as in previous educational movements, the Community Colleges should not use assessment as an exclusion mechanism for unprepared students. The political plan may be to deny

admissions to students who score at a certain level since the college "cannot afford" to instruct students at a certain level. Will access be denied due to lack of reading skills? or will the Community Colleges implement their mission of providing equal educational access to all students?

NOTES

1. Rivera, Manuel G., "Placement of Students in English Courses in Arizona Community Colleges," Paper presented at the combined meeting of the Arizona English Teachers Association and the Pacific Coast Regional Conference on English in the Two-Year College, Phoenix, Arizona, November 6-7, 1981

2. Brown, James I., Nelson, M.J., Denny, E. C., Examiner's Manual THE NELSON -DENNY READING TEST VOCABULARY .COMPREHENSION.RATE, FORMS C AND D. Palo Alto: Houghton Miffling Company, 1976

3. Cline, Terry A., "A Comparison of the Readibility of Community College Textbooks with Their Reading Ability of the Students Who Use Them," 1971, ED 050730

4. Bertalan, John J., "A Comparison of the Readibility of Community College Social Science Textbooks with Student Reading Levels and the Effect on Academic Achievement," 1976, ED 148442

5. Ibid.

6. Bertalan, John J., "Readibility Levels and Faculty Attitudes Toward Community College Social Science Textbooks," 1977, ED 148436

7. Ibid.

8. McClellan, Dorinda Ann, "A Comparison of Reading Ability of Junior College Students with the Readability Levels of Assigned Tesxts," 1970, Cited by Bertalan, John, in "Readibility Levels of Faculty Attitudes Toward Community College Social Science Textbooks," 1977, ED 049005

9. Hagstrom, John M., "A Comparison of the Reading Abilities of a Junior College Population and the Readability Levels of Their Texts," 1971, Cited by Bertalan, John, J., in "A Comparison of the Readibility of Community College Social Science Textbooks with Student Reading Levels and the Effect on Academic Achievement," 1976, ED050902

10. Holmberg, James, et al., "The Teaching of History to Developmental Students: A Block Project," 1979, ED168617

11. Brown, James, I., et al., EXAMINER'S MANUAL THE NELSON DENNY, op.cit., 1976, pp.14-16

12. Garrett, Harley F., "A Review and Interpretation of Investigations of Factors Related to Scholastic Success in Colleges of Arts and Science and Teaching Colleges," Journal of Experimental Education, December, 1949, p.130, Cited by Brown, James I., et al., in EXAMINER'S MANUAL THE NELSON-DENNY...,op.cit., 1976, p.14

13. Office of Admissions and Records, University of Minnesota, Unpublished data, Cited by Brown, James I., et al., in EXAMINER'S MANUAL THE NELSON-DENNY ... op.cit., 1976, p.15

14. Ibid., pp.14-15

15. Rivera, Manuel G., "Student Profile of Students Enrolled in Humanities, Fine Arts, and Social Sciences Courses in a California Community College," Unpublished Report , 1981

16. Ibid.

17. Haro, Carlos Manuel, indicates the following in Aztlan, Volume 14, No.1, Spring 1983:

> The Commission [U.S. Commission on Civil Rights] reported that 40 percent of all Chicanos in the Southwest fail to complete secondary education. Of the remaining 60 percent, three out of five are reading below their grade levels. (p.50)

18. Bray, Dorothy, "Assessment Placement: A Design for Student Success and Institutional Planning For the 1980's," Management Report, 1983-3/4 Association of California Community College Administrators

Brown, James I., et al., EXAMINER'S MANUAL THE NELSON-DENNY READING TEST..., op.cit., 1976, cites John Wesley Joyner's finding of predictive value of the Nelson Denny total score with selected Afro-American male and female freshman students, (p.15)

ED refers to the Educational Resources Information Center microfiche document number.